



Walking on sunshine: Effect of weather conditions on physical activity in older people

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Abstract:

BACKGROUND: It is unclear which weather parameters effect the motion-sensor-based measurement of physical activity in terms of walking duration in older people. **METHODS:** Between March 2009 and April 2010, the physical activity of 1324 German community-dwelling older people (>Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)65 years, 56.4% men) was recorded over 5 days using accelerometers. Multilevel linear regression analysis was used to estimate the effect of local daily weather parameters (daylight, maximum temperature, total global radiation, average precipitation, average wind speed and average humidity) on walking duration. **RESULTS:** Mean daily walking duration was comparable for men and women, with 104.4+/-50.7 min and 102.9+/-47.8 min, respectively. A linear relationship with walking duration was seen for all considered weather parameters. The strongest effect was found for global radiation, which involved an increase in walking duration of 16.1 min in men and 19.2 min in women between an average winter day (with about 0.8 kWh/m(2) radiation) and an average summer day (with about 6 kWh/m(2) radiation); similar patterns were found for daily maximum temperature and daylight. Furthermore, physical activity decreased significantly with increasing wind speed, precipitation and humidity. **CONCLUSIONS:** Studies on physical activity in community dwelling older people should consider weather conditions.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Precipitation, Solar Radiation, Solar Radiation, Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Germany

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified, Other Health Impact

Other Health Impact: Mean daily walking duration

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified